

We claim:

1. A friction wedge assembly for use in a suspension system of railroad car trucks, said friction wedge assembly comprising;

5 (a) a wedge having a bolster engaging surface, a truck side frame engaging surface and a surface disposed between said bolster engaging surface and said truck side frame engaging surface for engaging a means disposed in such truck side frame for providing a load on said friction wedge assembly;

10 (b) a bonding matrix having a plurality of cavities disposed on said truck side frame engaging surface of said wedge, said plurality of cavities having a predetermined configuration; and

(c) a composition liner, a first side of said composition liner having a predetermined configuration engageable with said bonding matrix and a radially opposed second side of said
15 composition liner for engaging a metal wear liner disposed on a side frame of such railroad car truck.

2. A friction wedge assembly, according to claim 1, wherein said wedge is formed as one of a metal casting and a reinforced
20 plastic.

3. A friction wedge assembly, according to claim 2, wherein said wedge is a metal casting.

4. A friction wedge assembly, according to claim 1, wherein
said bonding matrix is a metal bonding matrix.

5. A friction wedge assembly, according to claim 4, wherein
5 said metal bonding matrix is affixed to said truck side frame
engaging surface by one of a welded attachment and incorporation
into a casting design of said wedge.

6. A friction wedge assembly, according to claim 5, wherein
10 said metal bonding matrix is affixed to said truck side frame
engaging surface by said welded attachment.

7. A friction wedge assembly, according to claim 1, wherein
said first side of said composition liner is bonded directly to
15 said bonding matrix.

8. A friction wedge assembly, according to claim 7, wherein
said first side of said composition liner is bonded directly to
said bonding matrix by chemical bonding.

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9. A friction wedge assembly, according to claim 8, wherein
said chemical bonding is an adhesive.

10. A friction wedge assembly, according to claim 1, wherein
said predetermined configuration of said plurality of cavities of
said bonding matrix includes a pattern selected from a group
consisting of diamond, rectangular, circular, oval and various
5 combinations thereof.

11. A friction wedge assembly, according to claim 10, wherein
said pattern of said plurality of cavities is rectangular.

10 12. A friction wedge assembly, according to claim 10, wherein
said pattern of said plurality of cavities is diamond shaped.

13. A friction wedge assembly, according to claim 10, wherein
said plurality of cavities on said bonding matrix provides a
15 mechanical interlock between said composition liner and said wedge.

14. A friction wedge assembly, according to claim 1, wherein
said predetermined configuration of said first side of said
composition liner is compatible with said predetermined
20 configuration of said plurality of cavities on said bonding matrix.

15. A friction wedge assembly, according to claim 1, wherein
said truck side frame engaging surface of said wedge is
substantially perpendicular to said surface disposed between said

bolster engaging surface and said truck side frame engaging surface.

16. A friction wedge assembly for use in a suspension system
5 of railroad car trucks, said friction wedge assembly comprising;

(a) a wedge having a bolster engaging surface, a truck side frame engaging surface and a surface disposed between said bolster engaging surface and said truck side frame engaging surface for engaging a means disposed in such truck side frame for providing a
10 load on said friction wedge assembly; and

(b) a bonding matrix having a plurality of cavities disposed on said truck side frame engaging surface of said wedge, said plurality of cavities having a predetermined configuration.

15 17. A friction wedge assembly, according to claim 16, wherein said predetermined configuration of said plurality of cavities of said bonding matrix includes a pattern selected from a group consisting of diamond, rectangular, circular, oval and various combinations thereof.

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18. A composition liner for use with a friction wedge assembly, a first side of said composition liner having a predetermined configuration engageable with a corresponding configuration of a bonding matrix of a friction wedge assembly and

a radially opposed second side of said composition liner for engaging a metal wear liner on a side frame of such railroad car truck.

5 19. A composition liner for use with a friction wedge assembly, according to claim 18, wherein said predetermined configuration of said first side of said composition liner includes a plurality of projections, said plurality of projections having a predetermined shape.

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20. A composition liner for use with a friction wedge assembly, according to claim 19, wherein said predetermined shape of said plurality of projections is selected from a group consisting of diamond, rectangular, circular, oval and various
15 combinations thereof.